Practice Task: Giant Measurements

(Approximately 2-3 Days)

STANDARDS FOR MATHEMATICAL CONTENT

MCC2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

MCC2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

MCC2.MD4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

*****Mathematical Practices 1 and 6 should be evident in EVERY lesson. *****

BACKGROUND KNOWLEDGE

(Information quoted from Van de Walle and Lovin, Teaching Student-Centered Mathematics: Grades K-3, pages 228-230)

“Length is usually the first attribute students learn to measure. Be aware, however, that length measurement is not immediately understood by young children. At the kindergarten level, children should begin with direct comparisons of two or more lengths.

It is important to compare lengths that are not in straight lines. One way to do this is with string or rope. Students can wrap string around objects in a search for things that are, for example, as long around as the distance from the floor to their belly button or as long as the distance around one’s head or waist. Body measures are always fun.

The temptation is to carefully explain to students how to use these units to measure and then send them off to practice measuring. This approach will shift students’ attention to the procedure

(following your instruction) and away from developing an understanding of measurement using units."

ESSENTIAL QUESTIONS

- How can I determine appropriate tools of measurement?
- Why is it important for me to know how to measure different objects using different tools of measurement?

MATERIALS

- *Jim and the Beanstalk* by Raymond Briggs or similar book
- Butcher paper
- Index cards
- Crayons, markers, colored pencils
- Ribbon
- Measurement tools

GROUPING

Small Groups

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I
Read a book like *Jim and the Beanstalk* by Raymond Briggs to the class. Discuss giants, the concept of size for humans and for giants, and how they might be different. As a class, make a chart of estimations on what the giant's height might be, how big his waist might be, and how long the length of his foot might be. It would be helpful to refer back to body measurements portion of the ***Measurement Scavenger Hunt*** task. Estimations of the giant's measurements could be done in both inches and centimeters so children could see that the number of centimeters would be much larger than the number of inches.

Part II
Students will work in groups of 3-4 to create the different giant body parts based on feet and yard measurements. Students should use butcher paper to create giant's body parts.

Use these measurements for giant:

- Head- 2 feet across
- Neck-1 foot across
- Body/Torso-1 yard long
- Arms-2 yards long
- Legs-3 yards, 5 inches long

- Hands (with fingers) - 1 foot long
- Feet (with toes) – 2 feet, 1 inch long

Once all groups have cut, colored and decorated their giant body parts, piece them together to create a class giant. Allow groups to check other groups' measurements.

FORMATIVE ASSESSMENT QUESTIONS

- Is it possible to record all of our giant's measurements in one unit? *Some parts have been measured in feet, while others were measured in yards.*
- Would it be possible to use just one of the units?

DIFFERENTIATION

Extension

- Give students different measurements and have them construct giants in groups. Students could make a giant's foot from construction paper and discover how many foot lengths it takes to go to various locations in the school and graph the results. They could then compare the giant's foot to their foot in an organized table.
- Have the students write their observations about the size of the giant in their journal. Encourage them to list comparisons between the size of the giant and themselves, items in the classroom, etc.

Intervention

- Students could use modified measurements that aren't as large. Perhaps their measurements are of the sizes no larger than 2 feet.